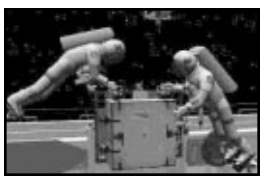
National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas



Station space walk

STS-80 to test International Space Station assembly, maintenance techniques. Story on Page 3.

Early Christmas

The Mir 22 crew spent this week preparing for a supply vehicle that will contain gifts. Story on Page 4.

Space News Roundup

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JSC photo By Benny Benavides

JSC engineers, scientists and managers showcase their technical advances in Bldg. 9 during the first NASA JSC Inspection. More than 1,200 top executives from companies in 28 states took advantage of the opportunity to learn about JSC's missions, technologies and facilities Wednesday and Thursday, and many of those said they would return and bring additional colleagues if the event is repeated next year. Organizers report that invited guests came from the manufacturing, engineering, medical, architecture, chemical, transportation, petroleum, energy and computer industries and from cities as disparate as Dallas, Orlando, Seattle and New York City. Numerous success stories are filtering in from the volunteers who supported the exhibits and demonstrations. They range from the Colorado research company that found common ground with what it is doing and the medical and life support work going on at JSC to a barge manufacturing firm's chief executive, who discovered some composite materials that may be useful in his business to a University of Texas Medical Branch administration team that may have discovered an answer to its scheduling software needs in the program being used to schedule shuttle crew flight activities.

Columbia lifts off to study stars on 16 day mission

By Karen Schmidt

Columbia lifted off Tuesday from Kennedy Space Center to study stars, produce improved semiconductor films and practice building the International Space Station.

Columbia and its crew of five-Commander Ken Cockrell, Pilot Kent Rominger and Mission Specialists Tammy Jernigan, Tom Jones and Story Musgrave—left Launch Pad 39B at 1:55 CST Tuesday on a 16-day mission to deploy and retrieve two satellites and conduct two space walks. Though weather, which delayed the mission by five days, was not a factor, *Columbia*'s departure was delayed about two minutes as controllers monitored the hydrogen concentration in *Columbia*'s aft compartment.

"The redline says once you go into flight pressurization with the external tank on hydrogen, if aft concentration goes above 300 parts per million then you hold at 31 seconds for two minutes and monitor that condition," said Launch Director Jim Harrington. "If it doesn't exceed 600 parts per million, then you're OK to launch."

The average levels of the hydrogen concentration were acceptable and controllers gave the go to launch. Once the countdown was resumed, *Columbia* made its way above Earth's atmosphere.

Columbia's crew spent its first few hours preparing for the ORFEUS-SPAS deployment. The ORFEUS-SPAS will investigate the far- and extreme-ultraviolet regions of the universe. Scientists hope to learn more about the evolution of stars, the nature of interstellar medium and the structure of galaxies.

Release of the satellite came about one hour later than expected due to longer predeployment checkout. Jernigan and Jones released the satellite at about 10:11 p.m. and Cockrell fired *Columbia*'s jets to maneuver away from the satellite. About three hours later, ground controllers confirmed the opening of the telescope door and said that the instrument appeared to be working properly.

On Flight Day 14, Cockrell and Rominger will conduct a series of course correction maneuvers to edge *Columbia* closer to the telescope. Jernigan and Jones will use the arm to grab the satellite and replace it into *Columbia*'s bay.

"This telescope that flies on the ORFES-SPAS was developed by the Germans in support of the German Space Agency," said Earle Huckins, deputy associate administrator of space science at NASA Headquarters. "I think its an excellent example of effective international scientific cooperation."

Hawkins said that this mission is important for its scientific value because ORFES-SPAS is expected to provide new observations for the worldwide astronomy community. The satellite is expected to make up to 300 observations of stars and intersellar medium during its two-week orbit. Data will be provided to more than 40 principal investigators and science teams around the world.

Today, Jones will deploy the Wake Shield Facility for three days of free-flying thin film growth operation. The WSF, a 12-foot free-flying stainless steel disk, is designed to provide an "ultra-vacuum" environment for growing semiconductor thin films for use in advanced electronics. Jones will retrieve the

Please see **STS-80**, Page 4

Crew named to fourth microgravity flight

Doi will be first Japanese astronaut to conduct space walk

Astronaut Kevin Kregel will command the crew of the fourth U.S. Microgravity Payload flight scheduled for an October 1997 launch on board *Columbia* on mission STS-87.

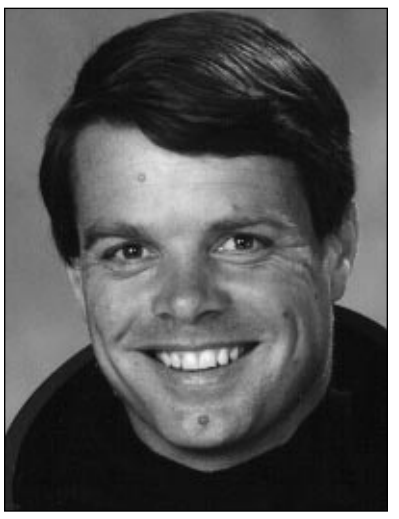
Kregel will be joined by Pilot Steven Lindsey and Mission Specialists Winston Scott, Kalpana Chawla and Takao Doi of the National Space Development Agency of Japan .

During 16 days on orbit, the astronauts will support fundamental science investigations and studies on the effects of microgravity on a variety of materials. The studies will focus on how materials, including metal and crystals, solidify when removed from the distorting effects of Earth's gravity, and will provide a better understanding of basic physics problems. Scott and Doi also will perform a space walk. Doi will be the first Japanese astronaut to conduct a space walk.

STS-87 will mark Kregel's third space flight, his first as commander. During his most recent space flight, he was the pilot on *Columbia* on STS-78, the longest duration shuttle mission to date lasting 17 days. The Life and Microgravity Spacelab mission served as a model for future studies onboard the International Space Station. The mission included studies sponsored by ten nations, five space agencies and the crew included a Frenchman, a Canadian, a Spaniard and an Italian. Kregel also flew on STS-70 that deployed the NASA Tracking and Data Relay Satellite.

Scott will be making his second shuttle flight, having flown previously on STS-72 in January 1996 during which he performed a space walk. During the nine-day flight the crew retrieved the OAST-Flyer.

Lindsey, Chawla and Doi are members of the 1995 Astronaut Class. They will be making their first journey to space during STS-87 having completed more than one year of training to prepare them for assignment to a shuttle flight. Doi was selected by NASDA in 1985 and participated in training as a backup candidate for a Japanese Spacelab mission prior to being named to the 1995 class.



Kevin Kregel

Photo courtesy of Boeing

Node 1, has successfully completed its last pressure test before its launch next year as the first American component of the International Space Station.

Station node completes final proof pressure test

The first U.S. component of the International Space Station, known as Node 1, has successfully completed its last proof pressure test before its launch next year and the construction of the station gets under way.

Boeing engineers in Huntsville, Ala., conducted the pressure test on Node 1 at the Boeing Huntsville plant. During the four-hour test, the node was successfully pressurized to 22.8 pounds per square inch, or 1.5 times normal maximum operating pressure.

This final successful test confirms the effectiveness of the eight struts installed at the node's radial ports. As in a previous successful test last August, the strains in the node's radial port were substantially reduced from those encountered during previous testing without the installed struts.

"This successful pressure test on Node 1 proves that we have designed and built a critical space station component that will perform as required in space," said Ross Dessert, Boeing lab/hab program manager. "With this test behind us, everyone working on this extraordinary program is looking forward to this time next year when we launch and begin building the station."

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